A Balance & Fall Prevention Rehabilitation Program For A 77-Year-Old Patient Following A Trimalleolar Fracture: A Case Report

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Unique

Balance and fall prevention are typical components of a rehab program in the elderly, however, there is limited research investigating the effects of the combination of balance and fall prevention in an elderly person with a trimalleolar fracture.

Purpose

The purpose of this case report was to describe a comprehensive physical therapy program combining balance training and fall prevention strategies for a 77-year-old patient after a trimalleolar fracture.

Foundation

- Ankle fractures are one of the most common injuries amongst the elderly, with an incidence rate of approximately 174 cases per 100,000 persons per year.[1]
- Trimalleolar fractures can be especially debilitating due to residual stiffness, edema, and pain, resulting in poor functional outcomes.[2]
- Research has revealed that one in four patients has chronically impaired balance and postural control after an ankle fracture.[3]
- Balance strategies become less effective in older adults, which can lead to an increased fall risk.[4]
- Balance training programs that focus on ankle proprioception have been shown to improve postural control in patients with ankle injuries.[5,6]
- Fall prevention programs that include mobility, strength, and minimizing environmental hazards have been shown to decrease fall risk by 13% to 40%.[7,8]
- The aim of this study was to investigate balance training and fall prevention strategies for a 77-year-old patient with a trimalleolar fracture.

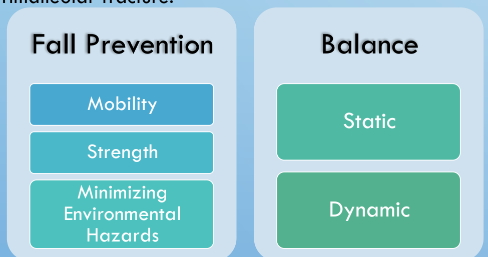

Figure 1: Typical components of fall prevention and balance programs.

Case Description

- **Patient:** 77-year-old female 10-weeks post-op ORIF of left ankle
- **Medical diagnosis**: Displaced trimalleolar fracture of left lower leg
- **Chief complaint:** Ankle stiffness, difficulties with ambulation & stair negotiation, impaired ability to care for her husband with Parkinson's Disease

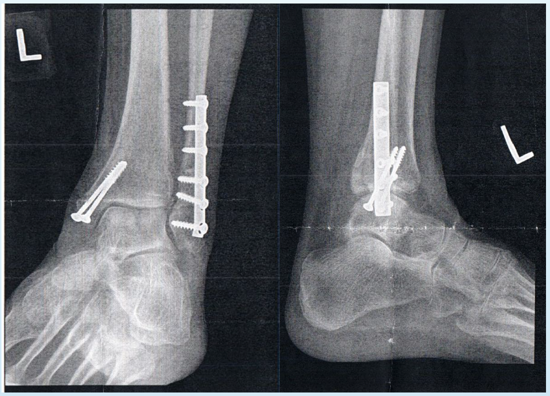

Figure 2: X-rays of the patient's left ankle 14 weeks post-ORIF. AP-mortise view (left picture) and lateral view (right picture).

Interventions

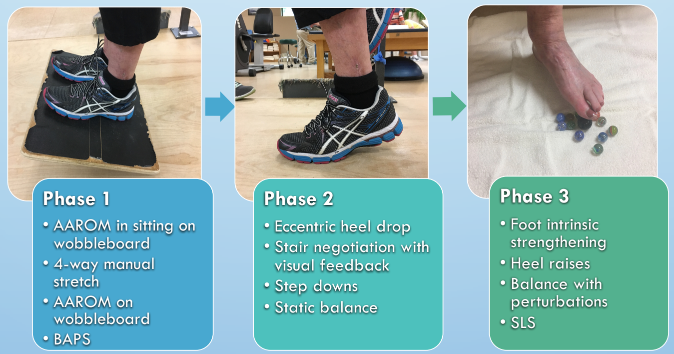

Figure 3: Phase 1 comprised of fall prevention components. Phases 2 & 3 incorporated both fall prevention and balance components. Balance progressed from static to dynamic activities as the patient progressed through the plan of care.

Observations

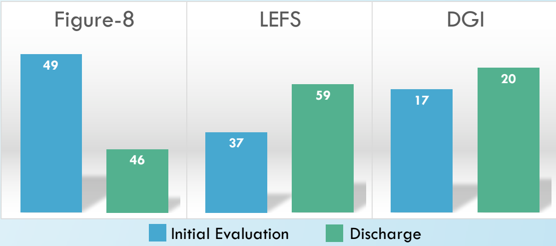

Figure 4: Figure-8 girth measurements were measured in centimeters. Lower Extremity Functional Scale (LEFS) maximum score is 80-points. Dynamic Gait Index (DGI) maximum score is 24-points.

Range of Motion	Initial Evaluation	Discharge
Dorsiflexion	- 4°	10°
Plantarflexion	24°	52°
Inversion	20°	25°
Eversion	14°	20°
Strength		
Dorsiflexion	3+/5 with pain	5/5
Plantarflexion	5/5	5/5
Inversion	5/5	5/5
Eversion	4/5	5/5

Conclusion

A rehabilitation program that combined balance exercises in addition to fall prevention strategies was beneficial for this 77-year-old patient after a trimalleolar fracture. Future research should consider investigating the effectiveness of a combined balance training program with fall prevention strategies in a larger population of older adults.

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